

WHAT IS CLAIMED IS:

5 1. An apparatus for use in multi-channel communication comprising:

a physical layer entity (PHY) including a physical coding sublayer (PCS) transmitter circuit that is operative to generate a plurality of encoded symbols according to one of at least two transmission encoding schemes; and

10 wherein the PHY is operative to select between the at least two encoding schemes.

2. The apparatus of claim 1 wherein one of the transmission schemes is based on a 1000BASE-T standard.

15 3. The apparatus of claim 1 wherein one of the transmission schemes is based on a legacy encoding standard.

20 4. The apparatus of claim 1 wherein the PHY is operative upon resolving to a slave device to monitor data transmitted by a remote master device, determine the encoding type of the master device, and select the corresponding encoding scheme.

25 5. The apparatus of claim 1 wherein the PHY is operative upon resolving to a master device to transmit data to a remote slave device, determine whether a link is achieved with the remote slave device, and selecting a different encoding scheme if a link is not achieved.

30 6. The system of claim 1, wherein the PHY is operative in response to resolving to a slave device to monitor channel A IDLE symbols, to compare those symbols with expected symbols, and to automatically switch encoding schemes if no match is found.

35 7. The system of claim 6, wherein the PHY is operative to initially set a polarity value to a first value, and to switch

the polarity value to a second value if the comparison of received symbols with expected symbols fails.

5

8. The system of claim 1, wherein the PHY is operative in response to resolving to a master device to transmit channel A IDLE symbols, to determine whether a link is achieved with a remote device, and to automatically switch encoding schemes if  
10 no link is established.

9. A method of achieving a communication link between a pair of transceivers, where one transceiver is a master device and the other transceiver is a slave device, the method  
15 comprising:

generating, at the master device, a plurality of encoded symbols according to a first transmission encoding scheme; transmitting the encoded symbols to the slave device;

determining, at the master device, if a link is achieved  
20 with the slave device; and

changing the encoding scheme at the master device if no link is achieved with the slave device.

10. The method of claim 9 wherein one of the transmission encoding schemes is based on a 1000BASE-T standard.  
25

11. The method of claim 9 wherein one of the transmission encoding schemes is based on a legacy encoding standard.

30 12. A method of achieving a communication link between a pair of transceivers, where one transceiver is a master device and the other transceiver is a slave device, the method comprising:

generating, at the master device, a plurality of encoded  
35 symbols according to a first transmission encoding scheme; transmitting the encoded symbols to the slave device;

processing the encoded symbols at the slave device to determine the encoding scheme utilized by the master device; and  
5 setting the encoding type of the slave device to match that of the master device, if the encoding type of the slave device is set to a different encoding type.

13. The method of claim 12 wherein one of the transmission  
10 encoding schemes is based on a 1000BASE-T standard.

14. The method of claim 12 wherein one of the transmission encoding schemes is based on a legacy encoding standard.

15 15. The method of claim 12, wherein processing comprises monitoring channel A IDLE symbols transmitted by the master device, comparing those symbols with expected symbols, and automatically switching encoding schemes if no match is found.

20 16. The system of claim 15, further comprising setting a polarity value of the slave device to a first value, and switching the polarity value to a second value if the comparison of received symbols with expected symbols fails.

25

30

35